

Managing Cultural Changes in Your Organization

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Maturity models are great; they provide a mostly technical road map for what we need to do to improve processes. Lean Six Sigma is also great – it provides a methodology for how to improve processes. The problem is that process improvement causes cultural changes. This article provides guidelines for managing cultural changes in your organization.

In earlier articles [1, 2], discussions on how Lean Six Sigma (LSS) affects the government, and how LSS compares to the Capability Maturity Model® (CMM®) have been presented. Key aspects of why LSS has been successful include the following:

1. It has an external focus based on listening to the voice of the customer.
2. The cost of poor quality is explicitly considered.
3. LSS is essentially good systems engineering in which the methodology is institutionalized.
4. Training is an inherent part of the methodology.

Many articles on capability maturity models have been published in CROSSTALK. The internal focus and structure of these are complementary to LSS. Both approaches have been used successfully, and when combined provide a powerful basis for producing effective products with low time and budget variances.

This claim has been recognized. For specific examples, the reader can search the Software Engineering Institute Web site at <www.sei.cmu.edu>. One of the companies publishing results on that site is Raytheon. Specifically, it is their North Texas Software division, located in Plano and McKinney.

While these methods are useful and there exists substantial data from both government oriented programs and purely commercial programs to prove it, they inherently involve changing the way organizations conduct business.

The change process is very taxing. People at all levels of an organization tend to resist change. This article explores why change is necessary, and provides some information on what it takes to enact change. This article is intended for leaders of organizations who are grappling with change. The topics discussed are the following: change is hard, facilitating change, strategic thinking, and first-year strategy. There are many books and journal articles written on these topics. A high-level discussion is provided here to provoke thought and additional reading.

Change Is Hard

Change affects people's lives. Reaction to change varies from the view expressed by the comic strip character, Pogo, "The certainty of misery is better than the misery of uncertainty," to the view of the late Jerry Garcia of the rock band The Grateful Dead, "Somebody has to do something, and it's incredibly pathetic that it has to be us" [3]. To successfully implement change, it is necessary to understand

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the urgency for change and to adopt a positive attitude about change. Understanding how change affects people in an organization is a key component of breaking down resistance.

Some of the causes for the urgency of change could be the following:

- Your customers are dissatisfied (and may be considering alternative sources).
- Budget issues.
- Commission reports such as the Space Commission [4], or reports of the Defense Science Board.
- Validity of your organization's busi-

ness assumptions.

- Self-inflicted pain.

Many organizations do not have a clear understanding of who are their customers, partners, and stakeholders. Consequently, it is difficult to know underlying causes for dissatisfaction and key issues that need to be addressed. In this article, the term *customers* refers to stakeholders, partners, service or product users, and operators.

Dissatisfaction occurs at many levels and for a variety of reasons. Sometimes an organization thinks that everything is fine because its average product or service quality is high, but people do not experience the average – they experience the variability. For example, telephone service is expected to be excellent. If a builder accidentally cuts a telephone cable, leaving thousands of users without service for five days, the telephone company is going to have a lot of unhappy customers. Customers might understand a one-day outage, but rapidly lose patience with longer periods. In areas where alternative service is provided by cable television companies, the telephone company can lose substantial business through no fault of its own.

Determining customer satisfaction as a predictive measure is very difficult. Organizations need to conduct surveys, talk to customers, and collect data. A company's sales are a backward-looking indicator of customer satisfaction. When people stop buying the product, it is frequently too late to regain market share. The current state of the American auto industry is a classic example of the result of customer dissatisfaction.

Sometimes customers are dissatisfied because they do not fully understand the services provided. Other times, dissatisfaction might be related to budget issues. Each organization needs to approach customer satisfaction from a variety of perspectives.

Typical budget issues include not understanding the cost of doing business, and being unable to defend an organization's budget to Congress. The latter issue

is related to stakeholders not understanding all the services provided and the value of these services.

Being able to demonstrate that an organization's processes are lean can go a long way toward defending its budget. It enables the organization to specify the services that will be lost as a function of budget reduction.

This concept also applies to acquisition. For example, if an organization were to acquire the next-generation weather satellite and experienced a significant budget cut, the organization should be able to tell Congress of the impact. The organization should be able to specify how this reduction affects the products that can be produced, and how these products are related to weather phenomena, agribusiness, transportation, and energy.

Reasons for budget reductions include cost overruns by major programs (in other parts of the agency or a related agency) and pressures to balance a budget. The latter is especially prevalent in years with major national catastrophes such as Hurricane Katrina and years in which wars are being fought.

Sometimes the urgency for change is provided by independent commission reports. For example, the Space Commission reported on significant problems associated with space programs and made a number of suggestions related to U.S. Air Force space programs and the National Reconnaissance Office (NRO). This report stated that the NRO has lost its edge. The chairman of this committee, Donald Rumsfeld, needed to resign a little more than one week before the report was delivered to the secretary of defense because he was to be sworn in as the secretary of defense. Needless to say, changes have occurred as a result of this report.

Space Commission reports and other congressional actions are indicators that the organization's business environment has changed – that its business assumptions may no longer be valid. There are many examples of organizations – sometimes whole industries – that fail to understand the changes to their environment. The result is frequently obsolete or incorrect business models. Examples include the following:

- The failure of General Motors (GM) to recognize competition from Japan (and other issues).
- The bankruptcy or near bankruptcy of all major airlines because they use a hub-and-spoke system and have very high wages. These airlines simply cannot compete with the business model of discount airlines represented by Jet

Blue and Southwest.

- Full-service stock brokerage firms have lost substantial business to discount firms and online trading.
- America Online (AOL) is still trying to understand what its business should be in the light of high-speed modems and excellent, free search engines. Google recently purchased 10 percent of AOL's stock and could become the driver for defining the AOL business model.
- Wang computers had a virtual stranglehold on word processing and office automation in the 1970s. They insisted on maintaining a proprietary system and could not survive the competition of Microsoft Word and Word Perfect.

The final cause for urgency of change discussed here is self-inflicted pain, which comes from a variety of sources. A primary source of self-inflicted pain is making it difficult to conduct business with your organization. If your organization provides services, how does it compare with the expected service that people receive

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from national companies like Nieman Marcus or Marriott? Even though the business areas are different, your organization can be held to that standard because your customers and stakeholders might patronize these companies.

Sometimes, self-inflicted pain arises from customers and stakeholders not understanding the services provided. These situations might be resolved through a good education or marketing effort. Other sources of self-inflicted pain are derived from leadership actions. For example, in one report a Navy captain ran a guided missile cruiser over a large submerged rock, injuring several crew members. Sailors on the bridge suspected the ship was headed for the rock, but they were afraid to tell the captain to change

course for fear of being wrong [4].

As you look at the urgency for change, tie these various causes together. Would the government be better off outsourcing your services? The answer is usually no, but it needs to be supported with data.

Facilitating Change

In a related article, the co-author and I stated, “The three most important approaches to changing culture are communications, communications, communications” [5]. *My new and improved list* consists of 12 items, but the first nine are heavily intertwined:

1. Leadership.
2. Leadership.
3. Leadership.
4. Commitment.
5. Commitment.
6. Commitment.
7. Communications.
8. Communications.
9. Communications
10. Strategic thinking.
11. Consistency.
12. Understanding the data.

Without fully committed leaders, any process improvement or change initiative will fail. It is simply not worth proceeding if you do not have this type of commitment. The leader of a small group might be able to improve the processes used by his or her group, but a sustained major change requires commitment at the top.

One day in 1993, I bumped into an acquaintance who was president and chief operating officer of a major corporation. He said that he was leaving the next day to attend a weeklong conference on business process reengineering (BPR). Think about the cost of attending that conference. That week corresponds to 2 percent of his time for the entire year. Think about all of the other items commanding his attention that will not be done during that week. Surely every vice president of that company knew that he was attending the conference, and understood how seriously he was taking BPR.

Somewhat over a year later, I asked this person about his accomplishments. The results were somewhat amazing – he completely reengineered a major production process (investing about \$125 million) and entered two new, but related, businesses. Success was achieved because of leadership and commitment at the top.

Communication is also critical to success. To enact change, it is necessary to talk to *everyone* in the organization and convey the urgency for change. It is also necessary to listen to people and to understand their concerns. These concerns can

be somewhat relieved by telling a story about the future. Describe your vision and why it is necessary. The Declaration of Independence tells the story of why change was necessary. The U.S. Constitution is a formal story of the political utopia envisioned by our founding fathers [6]. These stories tell the urgency for change and how people will be affected by the change.

Resistance is normal. Recipients of bad news go through a series of psychological states: denial, anger, bargaining, despair, and acceptance. In the final state they can act. Change leaders need to understand resistance to change and to communicate with people in ways that mitigate their resistance. Much of this communication involves explaining to people how they will be affected by the change.

Gen. Gordon Sullivan (retired) discusses leadership resistance in terms of three traps: doing things too well, being in the wrong business, and making yesterday perfect [7].

When a company is being run well, it is hard to recognize the need for change. Before Jack Welch became chief executive officer (CEO) of General Electric (GE), his predecessor was viewed as the top CEO in the country. Every management school viewed GE as an example because they were highly diversified, immune to the ups and downs of business cycles, and regularly grew between 2 percent and 3 percent per year. It was as good as it gets.

Welch recognized the need for change. He immediately said that GE performance was horrid. GE needed to grow at double-digit rates. GE went through a dramatic change, going from 80 percent manufacturing and 20 percent services in 1982 to 80 percent services and 20 percent manufacturing in 2002. During this 20-year period, the company's stock price soared.

Being in the wrong business consists of not understanding the implications of change. Alfred Sloan said that GM was in the business of making money, not cars. He also said that success comes not from technological leadership, but from having the resources to quickly adopt the innovations successfully introduced by others [8]. Consider the situation of GM today – their bond rating has been reduced to junk.

Making yesterday perfect causes people to ignore or rationalize data about their environment. In military terms, making yesterday perfect corresponds to fighting yesterday's war. The entire thrust of moving the U.S. Army into the digital age – the item that occupied most of Sullivan's time when he was chief of staff – has been to avoid future failure by being prepared for

future wars.

Summarizing this section, process improvement involves change. Leaders must be committed to change and be able to communicate the urgency for change to everybody in their organization. They need to listen, think strategically, have a reward system that is consistent with their goals, and understand the environmental data to which they are exposed.

Strategic Thinking

Strategic thinking, which in a sense encompasses leadership, commitment, and communications, is best described in terms of the trigraph depicted in Figure 1¹. In terms of change, the order of strategic thinking is strategy, structure, and culture. Culture and structure are briefly discussed. Most of the discussion in this section focuses on strategy because that comes first.

There are a variety of definitions for culture, but most of them are related to growth or transmitted behavior. At the workplace, culture is embodied in the rules taught to the next generation of workers. Understanding changes to these rules for success takes a long time. People need to observe whether the rewards are actually in accordance with the communicated changes. They also need to observe changes in the organization's structure.

It is reasonable to expect culture change to take from five to seven years to be fully realized. Culture change depends on changes to the organizational structure and to the strategy. The amount of time it takes for change cited here is based on the author's observations and general reading. The author is unaware of specific studies that identify time required for change.

The most important step for changing culture is to walk the talk (pardon the pun). Employees always know the truth because they observe leaders' actions. In 1989, a survey showed that 43 percent of

employees believed that management lies and cheats. Another survey taken in 1992 showed that 64 percent of the employees think that management lies [9].

The organization's actual values are communicated through actions – not posters. For example, does an organization reward firefighters or fire marshals? If firefighters are rewarded, do not expect the employees to buy into process improvement that stresses getting the job done right the first time.

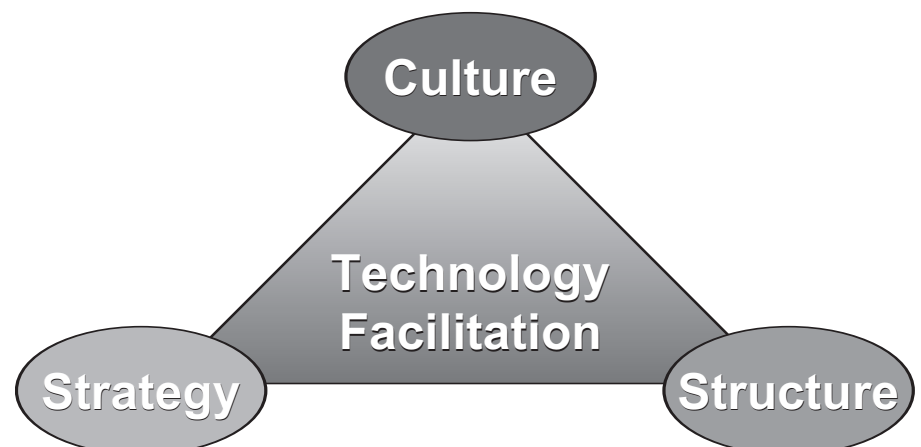
The structure of an organization consists of organizational charts (i.e., reporting), roles, and relationships. During the first year of change, an organization generally focuses on strategy – values, goals, and vision. Aligning an organization with its strategy generally takes one to two additional years. Leaders need to think about where they want to be in 10 years. They then need to determine the organizational structure that is needed to achieve their goals and vision.

The structure of the organization usually needs to be modified so that the right people are doing the right jobs. Sometimes, this is a matter of reassigning the right person who has been in the wrong job. Other times it is necessary to bring in new people, either through promotion or from outside the organization. This is the tough part of changing the structure.

Using GE as an example of a company that has undergone major cultural changes over the years, it is interesting to observe that GE has never brought in a new CEO from the outside. Jack Welch was a lifelong GE employee. His replacement, Jeff Immelt, was promoted from within.

Change can occur from within an organization by having the right people in the right positions. Jack Welch used LSS as a tool to help him create cultural change. At GE's 1999 annual meeting, he said that corporate strategies for the foreseeable future were globalization, services, and Six Sigma.

Figure 1: *The Strategic Thinking Trigraph*



If Six Sigma or CMM IntegrationSM is part of the strategy, how is this to be done from an organizational perspective? Is it part of a corporate quality group? Does each division need to have a process czar? Even when we know what needs to be done, it is difficult to enact these changes in industry, and much more difficult in government. It frequently requires leaders to act in the best interest of the person who will come after them. For example, VADM Phillip Balisle decided to implement LSS throughout the Naval Sea Systems Command. Not long after Balisle made this decision, VADM Paul Sullivan replaced him. Sullivan has also committed to LSS and is implementing it throughout his organization.

First-Year Strategy

The strategy of the organization is generally defined in terms of its mission, core values, vision, and goals. Organizational leaders are generally pretty good at thinking in these terms; however, getting the entire senior leadership team to have a common understanding generally takes about a year.

Holding a series of off-site meetings with advance reading and homework is a primary process for achieving this understanding. These off-site meetings need to be reinforced through time dedicated to strategic thinking at regular staff meetings. The first off-site meeting should focus on establishing a common understanding of the organization's mission and values. The mission is usually understood in government. Values are usually only implicitly known. Each leader thinks that he or she knows them, and in most good organizations there is considerable overlap in what people think. However, this off-site meeting is likely to reveal significant differences. These differences form the basis for extensive discussion of the organization's true values.

A couple of good reading assignments to be completed before the start of this off-site meeting are chapters three through five (on leadership and values) of Sullivan and Harper [10] and Larkin and Larkin [11].

Other topics to be covered in this first off-site meeting include the urgency for change and a brutally honest discussion of the organization's strengths and weaknesses. For example, discuss the reasons for recent successes and failures. Perform a strengths, weaknesses, opportunities, and threats analysis.

Discuss the reading assignments. Have

everybody do an exercise to specify why they agree or disagree with Gen. Sullivan's rule No. 2, "Leadership begins with values." Include discussion of leadership styles as part of this session. How do these styles reflect the organization's values? Other questions to ask include:

- How do these values speak to the future of the organization?
- How does organizational and individual behavior reflect these values?
- What behaviors are contradictory to these values?

Subsequent sessions can focus on vision. A leader's vision is a view of what his or her organization and products (or services, etc.) will look like in 10 years. It is critical that the vision and core values be in harmony. Each member of the senior leadership team should write a story that

“Leaders must be committed to the change and be able to communicate the urgency for change to everybody in their organization.”

describes the vision in terms of his or her business area or function. Telling stories is a great way to learn [12].

Core values and vision act like fields – electric, magnetic, gravitational, etc. They are unseen, but are real forces reflected throughout the organization. (See [13] for further discussion of this and related concepts.)

Consider the Tylenol scare of 1982 and Johnson & Johnson's reaction. Seven people died on Chicago's west side when they ingested extra-strength Tylenol capsules laced with cyanide. Even though this problem was not caused by Johnson & Johnson, they instantly pulled the product from the market and kept it off the market until tamper-proof packaging (and caplets) was developed. It cost the company more than \$100 million.

When asked how the company was able to respond so quickly, the CEO of Johnson & Johnson said that not doing so would have violated its core values. He did not need to call meetings; he just applied their core values [14].

The CEO's actions were highly visible to both employees and the public. Every

employee in this global company knew what happened. Within three months, Tylenol regained 95 percent of its market share.

Communicate your values and vision to everyone in your organization.

The senior leadership team also needs to define goals, activities, and metrics. Goals are long-term and when achieved, an organization's vision will be substantially realized. Activities are near-term tasks such as plans for the next fiscal year and are tied to the goals. Metrics measure progress toward achieving the goals.

LSS is an example of an activity. Depending on the goals, it could be aimed toward making the organization world-class, reducing costs to meet future budgets, or providing value to customers. Whatever its aim, justify it by measuring results.

Summary

This article focuses on the leadership actions needed to implement process improvement, which involves changing an organization's culture. That topic is generally not discussed when we espouse CMM, LSS, or any other process improvement method yet it is critical to successful implementation. This attempted culture change will cause the ultimate demise of process improvement efforts unless it is handled well.

For those reasons, leadership is the focus of this article. It is pointed out that change is hard. Successful change requires committed leaders who communicate with their employees and have action consistent with what they say. Leaders need to do a lot of strategic thinking. They need to recognize that change occurs over time. Patience is necessary. Leaders need to establish their strategy during the first year and develop an appropriate organizational structure within three years. Then, through consistency, paying attention to the data, and communication, the culture will change.

This approach is encapsulated in the title of Peter Schwartz's book "The Art of the Long View."♦

References

1. Shere, Kenneth. "Lean Six Sigma: How Does It Affect the Government?" *CROSSTALK* Mar. 2003: 8-11 <www.stsc.hill.af.mil/crosstalk/2003/03/shere.html>.
2. Shere, Kenneth. "Comparing Lean Six Sigma to the Capability Maturity Model." *CROSSTALK* Sept. 2003: 9-12 <www.stsc.hill.af.mil/crosstalk/2003/09/0309shere.html>.
3. Pritchett, Price. The Employee Handbook of New Work Habits for a Radically Changing World. Pritchett

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- Rummler-Brache, 1999.
4. National Security Association. Report of the Commission to Assess United States National Security Space Management and Organization. Washington, D.C.: NSA, 11 Jan. 2001.
 5. Shere, Kenneth D., and Scott R. Turner. "Vision and Cultural Change in Government Satellite Programs." Program Manager. May-June 2003: 88-92.
 6. Schwartz, Peter. The Art of the Long View. Doubleday, 1991.
 7. Sullivan, Gordon, and Michael Harper. Hope Is Not a Method. New York: Broadway Books, 1997.
 8. O'Toole, James. Leading Change. San Francisco, CA: Jossey-Bass Publishers, 1995.
 9. Larkin, T.J., and Sandar Larkin. "Reaching and Changing Front Line Employees." Harvard Business Review. May 1996.
 10. Sullivan.
 11. Larkin: 95-104.
 12. Kaye, Beverly, and Betsy Jacobson. "True Tales and Tall Tales: The Power of Organizational Storytelling." Training and Development. Mar. 1999: 45-50.
 13. Wheatley, Margaret. Leadership and the New Science. Berrett-Koehler Publishers, 1999.
 14. Tichy, Noel M. The Leadership Engine. New York: Harper Business, 1997: 116.

Note

1. The original source of this figure is uncertain, but I was first shown it by Sheila Sheinberg, a nationally known consultant in organizational behavior. Some of the ideas in this article come from working with her.

About the Author



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